

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for measuring latency between a first device and a second device during a user data session, said first and second devices communicating in accordance with a communications specification, said method comprising:

transmitting, during a user data session between said first and second devices, a message from said second device to said first device, said message being in accordance with said communications specification, said communications specification associated with a mobile telephone network;

during the user data session, receiving a response message from said first device, said response message being in accordance with said communications specification;

computing, during the user data session, an elapsed time from transmission of said message to receipt of said response message to determine said latency at a per-user-per session level based on a round trip delay evidenced by the elapsed time, said latency being computed by a network management element of the mobile telephone network and comprising at least one of a first latency component and a second latency component;

adding an accounting parameter field to a usage data record associated with the data session, the accounting parameter field comprising at least one of: an FMLT accounting parameter attribute associated with the first latency component and an FHLT accounting parameter attribute associated with the second latency component, wherein the first latency component represents a wireless access delay perceived by the network management element, and the second latency component represents an internet access delay between at least two network management elements, the usage data record provided by the communications specification, wherein the accounting parameter field extends the communications specification; [[and]]

recording said latency in the accounting parameter field, the usage data record capable of being stored in computer readable memory of a server, the server configured to determine data usage in connection with the user data session and;

generating, by the server, a billing record for the user based on the latency recorded in the accounting parameter field for the user data session, the server processing the latency to bill the user based on a predetermined quality of service.

2. (Original) A method in accordance with claim 1, wherein said message and said response message are control plane messages.

3. (Previously Presented) A method in accordance with claim 1, wherein said message and said response message do not affect the data usage of said first device.

4. (Previously Presented) A method in accordance with claim 1, further comprising: transmitting said usage data record containing said latency to said server.

5. (Cancelled)

6. (Original) A method in accordance with claim 1, wherein said first device and said second device are adapted to communicate wirelessly using said communications specification.

7. (Previously Presented) A method in accordance with claim 1, wherein said first device and said second device are adapted to communicate via a wire-line portion of the mobile telephone network using said communications specification.

8. (Original) A method in accordance with claim 1, wherein said first device is a mobile station and said second device is a mobility agent.

9. (Original) A method in accordance with claim 1, wherein said first device is a home agent and said second device is a mobility agent.

10. (Original) A method in accordance with claim 1, wherein said message and said response message are link establishment protocol messages.

11. (Original) A method in accordance with claim 1, wherein said step of transmitting is performed after said communication session has been established.

12. (Original) A method in accordance with claim 1, wherein said step of transmitting is performed upon the expiration of a timer.

13. (Original) A method in accordance with claim 12, wherein said timer is provided by said communications specification.

14. (Original) A method in accordance with claim 12, wherein said timer is not provided by said communications specification, said method further comprising:

implementing said timer in said second device, said timer configured to expire during said communication session.

15 - 25. (Cancelled)

26. (Currently Amended) A system for measuring latency during a user data session carried out in accordance with a communications specification, said communications specification associated with a mobile telephone network, the system comprising:

a first device adapted for communicating in accordance with said communications specification;

a second device comprising a network management element of the mobile telephone network and adapted for communicating with said first device in accordance with said communications specification and for transmitting a message to said first device during the user data session, receiving a response message from said first device during the user data session, computing, during the user data session, an elapsed time from transmission of said message to receipt of said response message to determine said latency at a per-user-per-session level based on a round trip delay evidenced by the elapsed time, said latency comprising at least one of a

first latency component and a second latency component, and recording said latency in an accounting parameter field of a usage data record stored in a first computer readable memory;
and

a server for storing the usage data record in a second computer readable memory, the server configured to determine data usage in connection with the user data session to generate a billing record for the user based on the latency recorded in the accounting parameter field for the user data session, the server processing the latency to bill the user based on a predetermined quality of service;

wherein said message and said response message are provided by said communications specification and said second device is capable of extending said communications specification by adding said accounting parameter field including said latency to the usage data record, the accounting parameter field comprising at least one of: an FMLT accounting parameter attribute associated with the first latency component and an FHLT accounting parameter attribute associated with the second latency component, wherein the first latency component represents a wireless access delay perceived by the network management element, and the second latency component represents an internet access delay between at least two network management elements.

27. (Cancelled)

28. (Cancelled)

29. (Original) A system in accordance with claim 26, wherein said message and said response message are control plane messages.

30. (Previously Presented) A system in accordance with claim 26, wherein said message and said response message do not affect the data usage of said first device.

31. (Previously Presented) A system in accordance with claim 26, wherein said server is connected to said second device, said second device further adapted for transmitting said usage data record containing said latency to said server.

32. (Cancelled)

33. (Original) A system in accordance with claim 26, wherein said first device and said second device are adapted to communicate wirelessly using said communications specification.

34. (Previously Presented) A system in accordance with claim 26, wherein said first device and said second device are adapted to communicate via a wire-line portion of said mobile telephone network using said communications specification.

35. (Original) A system in accordance with claim 26, wherein said first device is a mobile station and said second device is a mobility agent.

36. (Original) A system in accordance with claim 26, wherein said first device is a home agent and said second device is a mobility agent.

37. (Original) A system in accordance with claim 26, wherein said message and said response message are link establishment protocol messages.

38. (Original) A system in accordance with claim 26, wherein said second device is adapted to transmit said message upon the expiration of a timer.

39. (Original) A system in accordance with claim 38, wherein said timer is provided by said communications specification.

40 - 49. (Cancelled)

50. (Previously Presented) The method of claim 1 wherein the first device is a mobile station and the second device is a packet data serving node.

51. (Previously Presented) The method of claim 1 wherein the message from the second device is a Link Control Protocol Echo message and the response message from the first device is a Link Control Protocol Echo Response message.

52. (Currently Amended) The method of claim 1 further comprising:

storing a start time;

transmitting, to a home agent, a Mobile IP Registration Request message;

receiving a Mobile IP Registration Reply message from the home agent;

storing a stop time; and

computing ~~[[an]] the~~ internet access ~~delay latency~~ based on said start and stop times.

53. (Currently Amended) The method of claim 52, wherein said step of computing said internet access ~~delay latency~~ further comprises adjusting said internet access ~~delay latency~~ for a processing time associated with said home agent.

54. (Previously Presented) The method of claim 53, wherein said processing time is an estimated processing time.

55. (Previously Presented) The system of claim 26 wherein the first device is a mobile station and the second device is a packet data serving node.

56. (Currently Amended) The system of claim 26 wherein said latency is ~~[[an]] the~~ internet access ~~delay latency~~ and wherein further the first device is a home agent and the second device is a packet data serving node.

57. (Previously Presented) The system of claim 26 wherein the message from the second device is a Link Control Protocol Echo message and the response message from the first device is a Link Control Protocol Echo Response message.

58. (Currently Amended) The system of claim 26 wherein said latency is ~~[[an]] the~~ internet access ~~delay latency~~ and wherein further the message from the second device is a Mobile Internet Protocol Registration Request message and the response message from the first device is a Mobile Internet Protocol Registration Reply message.

59. (Previously Presented) The system of claim 58, wherein said second device is a packet data serving node adapted to adjust said internet access latency for a processing time associated with said first device, said first device comprising a home agent.

60. (Previously Presented) The system of claim 59, wherein said processing time is an estimated processing time.

This listing of claims replaces all prior versions, and listings, of claims in the application.